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He thought, he had enough, we drew the Pipe out of his Vein, the Sheeps blood ran through it with a full stream; which it had not done, if there had been any stop before, in the space of those two minutes; the blood being so very apt to coagulate in the Pipes upon the least stop, especially the Pipes being so long as three Quills.

The Man *after* this operation, as well as *in* it, found himself very well, and hath given in his own Narrative under his own hand, enlarging more upon the benefit, he thinks, he hath received by it, than we think fit to own as yet. He urg'd us to have the Experiment repeated upon him within 3 or 4 days after this; but it was thought advisable, to put it off somewhat longer. And the next time, we hope to be more exact, especially in weighing the Emittent Animal before and after the Operation, to have a more just account of the quantity of Blood, it shall have lost.

A Relation

Of some Trials of the same Operation, lately made in France.

1. *M. Denys*, Professor of the *Mathematicks* and *Natural Philosophy* at *Paris*, in a Letter of his to the *Publisher* relateth, That they had lately transmitted the Blood of four *Weathers* into a *Horse* of 26 years old, and that this *Horse* had thence received much strength, and more than an ordinary stomach.

2. The same person was pleased to send to the same hand a printed *Letter*, written to the *Abbot Bourdelot* by *M. Gadroys*, being an *Answer* to a Paper of one *M. Lamy*, and confirming the *Transfusion* of Blood by new Experiments. In this *Answer* the *Author* is vindicating the *Transfusion* from Objections; where first he takes notice, That, whereas the *Objector* undertakes to refute the Experiments made, by simple *Ratifications*, it ought to be considered, that the *Quodlibetical* Learning of the *schools* is capable enough to find Arguments *for* and *against* all sorts of Opinions, but that there is nothing, but *Experience*, that is able to

give the Verdict and the last Decision, especially in matters of *Natural Philosophy* and *Physick*: That a hundred years ago, there were no Arguments wanting to prove, that *Antimony* or the *Vinum Emeticum* was poyson; the use of it being then forbidden by a *Decree* of the *Faculty of Physicians*; and that at this day there are no Arguments wanting, to prove the contrary, and to assert, That it is a *Purgative* of great importance, follow'd with wonderful effects, the same *Faculty* having publish'd a *Decree* the last year, by which it permits, and even ordains the use thereof. So that it ought to be said, that *Sole Experience* hath determin'd this matter, and that the Recovery of many persons, and amongst them, of the *Most Christian King* himself, hath more conduced to convince Men of its usefulness, than all the bare Ratiocinations, that could be employed to defend it. And so it is with all *Remedies*, there being not one, that is not approved by some *Physician* or other, who thinks to have reason on his side, and disapprov'd at the same time by others of that Profession, who conceive to have it on theirs: Whereas *He* certainly is to be esteemed the most *Rational*, that in these matters is guided by good *Experience*. And since the *Transfusion of Blood* is a *new* thing (unknown for ought we know) to all former Ages, ingenious Men, and lovers of the Increase of the Stock, serving for the relief and conveniencies of Human Life, do no more, in this particular, than propose and recommend it to generous and unprejudicate *Physicians*, to judge of its agreeableness to *Human Bodies*, and to make trials of it accordingly; themselves esteeming, that since it concerns the Health and Life of Man, it cannot be examin'd too severely; though at the same time they conceive, that 'tis unequal to stand herein to the verdict of such arrogant Men, who from a self-conceit of knowing all things already, are very impatient at any thing discover'd, which they have not thought on themselves: Those Men being the best advis'd and the most to be relied on, who do not precipitate their Judgment, but stay for many Experiments, carefully made, to conclude themselves by. For which purpose, the Author wishes, that *Persons* in power would cause a good number of Experiments of this Invention to be made, and examin them either themselves, or give order to prudent and free-spirited *Physicians* and *Chirurgeons* to do so.

Among

Among the *Objections*, (which the Author finds to be generally grounded upon inconsiderations, mistakes, and a supposition, as if peremptory Affirmations touching the effects of this Transfusion were obtruded, whereas all is left to the success of Experiments faithfully made) there is one, directed against the *effects* of that operation, which appeared in the young Man, who (by Mr. *Denys's* Relation in his printed *Letter* to Monsieur *De Montmor*) after he had received the Arterial Blood of a Lamb, was cured of an extraordinary *Lethargy*, consequent to a violent Fever, wherein he had been let blood 20 times. And the *Objection* is, That the lively apprehension the said young Man had of a remedy so unusual, and whereof the success could not but appear very dubious to him, and so render him exceedingly anxious, did so rouse his spirits, and put them into such motion, as to disengage them from that embarrassment, which hindered their diffusion; upon which disentanglement follow'd all the other good effects, that are imputed to the Transfusion.

To this Conceit the *Answerer* replies, That if the *Apprehension* could have cured this young Man, the Cure would doubtless have been effected 24 hours before the *Transfusion*, because he then happen'd to have a very great one, by falling down stairs; as was also observed in Mr. *Denys's* his *Relation* of this Experiment. Besides, that this Patient was noted to be so far from apprehending or fearing this Operation, that he did not so much as know, what the *Transfusion* was; but thought, the Lamb was only applied to his Arm, to suck from him his ill Blood, as he was made to believe, after an ancient and usual way.

To that *Objection*, wherein some put weight, *viz.* That there is a great difference between the *Flesh* we eat for food, and the Blood that is transmitted *immediately* into the Veins; the *former* undergoing a great Alteration, which the *latter* does not: Our *Author* replies, That of the three principal Digestions of the Aliment, that have been always distinguish'd by Authors, the *First*, which is made in the Stomach, is not considerable in comparison of the two others, which are made of the *Chyle* and the *Blood*, in the Heart, the Liver, and generally in all the parts that receive nutrition, which he illustrates by this: That as the Concoction, which is made of the Juices of the Earth in the Root
and

and Heart of the Trunk of a Tree, does not so much serve to the production of this or that Fruit, as the last *Filtration*, that is made of those Juices in the small *Fibres* of the Grafts; so also all those Digestions, which are supposed to be made in the Stomach and the Heart or the Liver of Animals, do not so much serve to give the particles of the Aliment those *Figures*, which they require to be converted into the substance of Man, as the *diversity* of *Pores*, that strain them last of all, and differ in the Bones, Flesh, Cartilages, and other parts; in which the Ancients for this reason did admit as many different Assimilating faculties. Now, *saith he*, though the new Blood, which is given in the *Transfusion*, undergoes not the *first* Concoction, made in the Stomach, yet it suffers the two others, in making many Circulations together with the *native* blood, and that therefore nothing hinders, but it may be fit to be changed into the substance of Man, without inconvenience.

The rest of the *Objections*, here alledged, seeming to be of no moment, though answer'd by our *Author*, we shall here pass by, and, for a general answer to all, employ Experience, and the several successful Transfusions, he relates; as those of *Lambs-blood* into *Dogs*, which, after the space of several months from the time of the Operation, do not only live, but are very well, and some of them grown fatter than they were before; and of *Kids blood* into a little *Spaniel bitch* of 12 years of age, which, a little while after the Operation, grew vigorous and active, and even proud in less than eight days. To which, he adds a considerable Experiment, lately made upon a person, that had been for three weeks afflicted with the complicated Distempers of an Hepatick Flux, a Lientery, and a bilious Diarrhæa, accompanied with a very violent Fever; and had been attended by four Physicians, who having blooded, purged, and clystered him, as much as they thought fit, he grew at last so weak, that he was unable to stir, lost his speech and senses, and vomited all he took: whereupon they altogether despairing of and abandoning the Patient, and declaring that they did so, in the presence of divers persons of *honor*, consented to have the *Experiment* of *Transfusion* made upon the *Patient*, which his *Relations* had proposed, as the last *Refuge*; very unwilling to omit any thing, that might seem probable to rescue a dying
Man.

man. *M. Denys* and *M. Emmerey* were besought to employ this last succours. But they, seeing the deplored state of the Sick, absolutely refused to make the tryal, alledging, that the Transfusion was not a means to restore either the solid parts, or to cure a Gangrene, which was apparently in his Intestines; they should have used it sooner, and at the very time, when the great evacuations of blood were made in the Patient. But, notwithstanding all this, they were exceedingly press'd to comply with their desires, and not to let their Friend dye without trying all means possible. They, being overcome by this importunity, and having secured their honour and safety, by the declaration above mentioned of the Physicians, and by their consent to the tryal of this Experiment, transfused into his Veins a small quantity of *Calves* blood in a morning; whereupon, though this Patient was already in a Lethargy, and convulsive, and had a very low and creeping pulse, yet, behold, an unexpected change happen'd to him. His pulse grew higher in an instant, and became more vigorous, his Convulsions ceased, he look'd fixedly on the By-standers. spoke pertinently, and in divers Languages to those that spoke to him, and fell into a very quiet sleep. Awakening three quarters of an hour after, he took several Broaths for the rest of the day, not vomiting at all, nor having any stool, although for three days before he could take nothing at the Mouth, nor had had any intermission of his looseness since the very beginning of his sickness. Having thus remained for 24 hours, his forces began to diminish again, and his pulse to grow low, and the looseness to return. His Friends then urged a second Transfusion, which being at last performed the next morning, the Patient indeed recover'd some vigour again, but that was of a short duration. For though then also he took his breath well, without vomiting, yet he voided still by stool, and at noon he began to decline, and about 5 at night he died, without the appearance of any convulsions. His body being open'd before the Physicians, the *Ileon* was found return'd into it self from the top to the bottom, and below that knot unto the *anus* the Bowels were all livid, gangren'd, and of an unsupportable stench. His *Pancreas* was extraordinarily hard, and so obstructed, that the *Pancreatick* Juice had no liberty to diffuse it self into the Guts.

His

His *Spleen* was very thick, and his *Liver* big, and in some places livid. The *Heart* very dry, and, as 'twere, burnt. And having found the Vein, by which the Transfusion had been made, there was, from the place of the opening of the Arm, to the Heart, almost no blood found in it, no more than in the other Veins, nor in the Ventracles of the Heart, for as much as that little, he received, had been imbibed by his hot and dry Flesh. All which this *Author* assures, can be attested both by a dozen persons of great veracity, who were present at this dissection, and confirmed by the *Certificates* given by the Physicians themselves, to be sent to the *Parents* of the deceased Stranger, who is the very same with him, of whom a less punctual account was given, *Numb.* 28. p. 519.

Some new Experiments

Of injecting Medicated Liquors into Veins, together with the considerable Cures perform'd thereby.

This was lately communicated in a Letter from Dantzick written by Dr. Fabricius, Physician in Ordinary to that City, which out of the Latin we thus English.

FOrasmuch as we had a great desire to experiment; what would be the effects of the Chirurgery of injecting Liquors into *Humane* Veins, three fit Subjects presenting themselves in our Hospital, we thought good to make the *Trial* upon them. But seeing little ground to hope for a manifest operation from only *Altering* Medicines, we esteemed, the Experiment would be more convenient and conspicuous from *Laxatives*, which made us inject by a Syphon about two Drachms of such a kind of Physick into the *Median* Vein of the right Arm. The *Patients* were these. One was a lusty robust Souldier dangerously infected with the *Venereal Disease*, and suffering grievous protuberatings of the bones in his Arms. He, when the purgative Liquor was infused into him, complained of great pains in his Elbows, and the little valves of his Arm did swell so visibly, that it was necessary by a gentle compression of ones fingers to stroke up that swelling towards the Patients shoulders. Some 4 hours after, it began to work; not very troublesomly; and so it did the next day, inso-much that the Man had five good stools after it. Without
other